Journal of Traumatic Stress, Vol. 16, No. 3, June 2003, pp. 203–210 (© 2003)

The Relationship Between Self-Disclosure and Symptoms of Posttraumatic Stress Disorder in Peacekeepers Deployed to Somalia[1]

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The challenges of peacekeeping place individuals at risk for the development of significant psychological distress (e.g., B. T. Litz, S. Orsillo, M. Freidman, P. Ehlich, & A. Batres, 1997). Self-disclosure has been shown to ameliorate psychological distress following exposure to potentially traumatic events (J. W. Pennebaker & K. D. Harber, 1993). Sharing, or self-disclosure of deployment-related experiences, was the focus of this study and was hypothesized to be associated with adaptation. As part of a larger investigation, 426 U.S. military personnel who served as peacekeepers in Somalia were administered a comprehensive psychosocial questionnaire that included measures of exposure to negative and potentially traumatic experiences, reception at homecoming, self-disclosure, and PTSD symptom severity. The results indicate that adjustment to peacekeeping is significantly related to self-disclosure, especially to supportive significant others.

KEY WORDS: self-disclosure; peacekeeping.

Since the end of the cold war there has been a dramatic increase in multinational peacekeeping operations. The goal of these peacekeeping operations has been to neutralize the threat of violence occurring between and within sovereign states and to provide humanitarian aid. U.S. military personnel, serving in these missions as peacekeepers, are often placed in volatile and unfamiliar circumstances, which can be very stressful. Most soldiers appear to adapt themselves to peacekeeping very well. However, soldiers who conduct peacekeeping operations in which there are unexpected acts of violence and unrest are at risk for developing posttraumatic stress disorder (PTSD) and other problems related to exposure to severe stress (Litz, Orsillo, Freidman, Ehlich, & Batres, 1997; Orsillo, Roemer, Litz, Ehlich, & Friedman, 1998).

Little is known about the factors that reduce the risk for psychological distress linked to peacekeeping. Related research provides a foundation from which to hypothesize relevant protective factors. Specifically, there are numerous studies of combat veterans demonstrating that intact social supports, active coping, and positive homecoming experiences are associated with positive psychological adjustment (Fairbank, Hansen, & Fitterling, 1991; Green, Grace, Lindy, Gleser, & Leonard, 1990; Johnson et al., 1997; King, King, Foy, Keane, & Fairbank, 1999). Although it has been suggested that these factors impact adaptation to severe stress by facilitating active processing and sharing of painful memories (e.g., Fontana & Rosenheck, 1994), the mechanism through which these

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0894-9867/03/0600-0203/1

factors mitigate the impact of exposure to potentially traumatic events is not well understood.

There is a growing body of research documenting the ameliorative effect of self-disclosure following exposure to highly stressful or potentially traumatic events. Previous studies have found that for individuals who have experienced a wide range of traumatic events, from incest to natural disasters, discussing the event is associated with lower levels of psychological distress and better coping skills (Lepore, Silver, Wortman, & Wayment, 1996; Pennebaker & Harber, 1993). In addition, studies of Australian firefighters and survivors of the Jupiter cruise ship disaster found increased rates of PTSD in those individuals who did not discuss their traumatic experiences (Joseph, Andrews, Williams, & Yule, 1992; McFarlane, 1988). Furthermore, other studies have found that Vietnam veterans who discussed their military experience were less likely to develop PTSD than those who did not disclose (Green et al., 1990; Solkoff, Gray, & Keill, 1986).

There are several viable explanations for the beneficial effects of disclosing. Verbalizing feelings and thoughts about a potentially traumatic event is likely to impose a logical narrative structure onto memories that might otherwise be stored in a disorganized fashion and to facilitate the integration of thoughts and feelings about the event (Foa & Kozak, 1986). Self-disclosure is also likely to expose the discloser to the intense emotions associated with the experience, which may serve to facilitate the extinction of the strong affect tied to the event.

To better understand the relationship between self-disclosure and psychological distress, researchers have begun to explore various components of self-disclosure. One element that has been suggested to be of import is the confidant's reaction to the disclosure. A study of college students, who reported experiencing a variety of highly stressful or potentially traumatic events, found that participants reported that they received a range of responses to their disclosures, from expressions of support and understanding to disappointment and anger (Kelly, Coenen, & Johnston, 1995). A study of women with sexual assault histories found increased levels of PTSD symptomatology in individuals who reported more negative social reactions to their disclosure (Ullman & Filipas, 2001). Relatedly, Lepore et al. (1996) documented higher levels of intrusive thoughts and depressive symptoms for bereaved mothers who were discouraged or barred from disclosing.

Currently, the literature on self-disclosure and psychological well-being is limited by restricted measures of psychological distress and the failure to take into account the magnitude of the stressor that prompted the disclosure. Although prior studies have examined the impact of self-disclosure following a variety of stressors, these studies have not included measures assessing the characteristics of the stressor. This issue is likely to be critical as some experiences may not necessitate the sharing of the event to promote psychological well-being. Research is also needed to clarify the impact of confidants' feedback on the psychological distress of the discloser. For example, there is little information available on whether nondisclosure is more or less hazardous to a person's mental health than having one's disclosure met with a negative or invalidating response or whether the effect of the confidant's feedback is related to the familiarity between the discloser and the confidant. Although one might suppose that invalidating feedback by a partner or spouse to disclosure would be more damaging than similar feedback from a friend, it is an empirical question.

In this study we systematically explored the long-term impact of self-disclosure on the mental health of U.S. military personnel deployed to peacekeeping operations in Somalia. We also explored the relationship between the reaction of confidants to the disclosure and psychological adjustment. We began by testing two theories about the relationship between self-disclosure and PTSD symptom severity. In the first model (the nonspecific model), we predicted that self-disclosure would mitigate PTSD symptom severity regardless of the veterans' degree of exposure to potentially traumatic events and to the other stressors associated with peacekeeping. In the other model (the stress-specific model), we predicted that veterans' reports of self-disclosure would interact with reports of exposure to stressors such that self-disclosure would exert a greater buffering effect on symptoms of PTSD for individuals reporting a higher level of exposure to combat or other peacekeeping-related stressors than for individuals reporting lower levels of exposure. Given that self-disclosure can occur in the context of a variety of relationships, these models were tested across different categories of confidants including (a) partner/spouse, (b) family, (c) friends, (d) other military personnel, and (e) professional counselor and/or clergy.

Next, we examined the relationship between symptoms of PTSD and the reactions of others to the veterans' disclosures. We predicted that reactions to self-disclosure, especially from significant others and family members, would be related to PTSD symptom severity, such that more supportive reactions from significant others would be negatively associated with symptoms of distress. We also anticipated that those individuals who reported that they did not discuss their deployment experience with anyone would fare better than those who reported that their disclosures were met with negative or nonvalidating responses.

Method

Study Design and Participants

The data for this study were collected as part of a longitudinal examination of veterans of the Somalia peacekeeping mission (Litz, Orsillo, et al., 1997). There were 3,461 participants who completed an initial questionnaire approximately 15 weeks after their return to the United States. Approximately 57% of the initial sample agreed to be recontacted. Participants who agreed to be followed were then contacted roughly a year-and-a-half postdeployment, either by phone or by mail. A total of 1,040 veterans were successfully contacted (518 by mail and 522 by phone). Those individuals whose data were collected by mail were not included in this study because their questionnaires did not contain the self-disclosure measures ($n = 518$). In addition, a small percentage of those interviewed by phone who had missing data on the self-disclosure measures ($n = 40$) were excluded. Further, female veterans ($n = 56$) were excluded because several cells contained too few women to draw meaningful conclusions (e.g., women who spoke to a professional counselor or clergy). The final number of participants in the study sample who were included in the following analyses was 426.

The mean age of the participants was 26.85 years ($SD = 6.01$ years). The study group was 73% Caucasian and 60% of the peacekeepers were married. The majority of the study group was composed of enlisted personnel (88%). This group of peacekeepers reported achieving an average of 12.87 ($SD = 1.48$ years) years of education. At the time of the interview, the peacekeepers had served an average of 6.41 years ($SD = 5.61$ years) in the armed forces and the mission in Somalia was the first mission for the majority of the study group (79%). Data on the complete population of U.S. military personnel who served in Somalia and the demographic characteristics of those veterans who participated in this study are comparable (Litz, Orsillo, et al., 1997).

Measures

The first two measures described below were rationally derived for the study. They were based upon preexisting measures in the literature on self-disclosure of traumatic incidents and recovery from traumatic exposure. Several single-item measures were utilized as a result of the broad range of data that was to be collected in the initial study and out of a need to limit the burden that an excessively long interview might have placed on study participants.

Self-Disclosure

A set of five dichotomous items were used to evaluate whether participants discussed their peacekeeping experiences with members of the following different categories of confidants: partner/spouse, family members, friends, other military personnel, and professional or clergy. The instructions read, "I am going to read to you a list of types of people with whom you may or may not have discussed your Somalia experiences. Please tell me if you have ever discussed your Somalia experiences with each of these types of people."

Perception of the Reaction to Disclosure

A set of five items was used to assess the perceived reaction to the disclosure. Participants rated their perceptions separately for each of the five aforementioned categories of confidants on a Likert scale that ranged from 1 (*extremely negative*) to 5 (*extremely positive*). In addition, an average of the reported reactions by the various confidants to the disclosure was computed for each participant. Participants who reported a mean reaction to disclosure that was less than or equal to 3 (*neutral*) were classified as having met with a nonvalidating or negative environment to their disclosure. Participants whose mean on the reaction to disclosure score was greater than 3 were coded as having met with a supportive and validating environment.

Combat Exposure

This seven-item scale assessed exposure to Criterion A events as specified by the *DSM-IV*; it was fashioned after the Combat Exposure Scale (Keane et al., 1989; Litz, Orsillo, et al., 1997). The respondent used a 5-point Likert scale to indicate the frequency with which he had experienced specific mission-related events. Items included questions such as "Did you go on patrols?"; "Was your unit fired on?"; and "Did you see Somalis dying?" The internal consistency of this scale was .75.

Other Stressors Associated With Peacekeeping Scale

This 15-item measure assessed stressful events and circumstances that occurred during the peacekeeping mission to Somalia that might have created a sense of personal discomfort or distress, but that did not constitute an imminent threat to life (see Litz, King, King, Orsillo, & Friedman, 1997, for further details). The respondent used a 5-point Likert scale to indicate the impact of the event ranging from 1 (*not at all, no impact*) to 5 (*extremely*

negative impact). Examples of items included, "being in Somalia over the holidays," "lack of personal space," and "danger of contracting physical disease." The internal consistency of the scale was .85.

Posttraumatic Stress

This measure provided an index of the impact of the demands and stressors of peacekeeping in Somalia. It was calculated by standardizing the scores on the PTSD Checklist (PCL; Blanchard, Jones-Alexander, Buckley, & Forneris, 1996; Weathers, Litz, Herman, Huska, & Keane, 1993) and the Mississippi Scale for PTSD (Keane, Caddell, & Taylor, 1988) and averaging them. The PCL is a 17-item test that evaluates the severity of each of the 17 PTSD symptoms outlined in the *DSM-IV* using a 5-point Likert scale. Where appropriate, the items were worded to make reference to the specific deployment experiences of the peacekeepers (e.g., "Suddenly acting or feeling as if your Somalia experiences were happening again"). Using the Structured Clinical Interview for *DSM-III-R* as the criterion, the reported sensitivity and specificity are .82 and .83, respectively (Weathers et al., 1993). The Mississippi Scale for PTSD is a 35-item test that evaluated the frequency of PTSD symptoms and associated features on a 5-point Likert scale. It was adapted to capture pertinent experiences in Somalia (e.g., "I wonder why I am still alive when others died in Somalia."). Based on *DSM-III* criteria for PTSD, the reported sensitivity and specificity of the instrument are .93 and .89, respectively (Keane et al., 1989).

Procedure

The initial cohort of participants was made available to the research team by commanding officers; however, participation in the project was not mandatory. Participants completed the initial psychosocial survey in group sessions, under standardized conditions, in large auditoriums or smaller classrooms. The questionnaire took approximately 45 min to complete. The follow-up interviews that were conducted by phone took approximately 30–45 min. Well-trained layinterviewers from a national survey research organization conducted these interviews.

Data Analysis

A series of multiple linear regressions (MLRs) were utilized to test the main and the interactional effects of exposure to combat and other stressors associated with peacekeeping, and self-disclosure on symptoms of PTSD. Separate MLRs were conducted for each category of confidant (e.g., partner/spouse, family members, etc.). Similar MLRs and a general linear model were used to examine the impact of the confidants' reactions to the self-disclosure and PTSD symptom severity. A Bonferoni correction was applied to correct for an increase in the possibility of a Type 1 error given that separate regressions were conducted for each of the five categories of confidants. All analyses were conducted using the SPSS Statistical Software Package (version 9.0; SPSS, Inc., 1999).

Results

Characteristics of the Study Sample

All study participants were peacekeepers. However, their duties and their exposure to significant combat stressors varied considerably. The mean level of reported exposure to potentially traumatic events was 1.85 ($SD = 0.72$), which is considered to be light to moderate. More specifically, 61% of the sample reported going on patrols or other dangerous duty, 51% noted that they had rocks thrown at their unit, 36% experienced their unit being fired upon, and 32% of the participants experienced a hostile rejection of help. The peacekeepers rated the other stressors associated with peacekeeping as having a mean impact of 2.47 ($SD = 0.71$), which indicates that the participants felt that these events had a moderate to considerably negative impact on them. For instance, 80% of peacekeepers studied stated that having to exercise restraint had a moderate to extremely negative impact, 80% reported that the danger of physical disease had a moderate to severely negative impact, 60% reported that seeing the devastation in Somalia had a moderate to extremely negative impact, and 55% stated that seeing Somalis starving had a moderate to severely negative impact.

The mean score for our sample on the PTSD Checklist was 29.42 ($SD = 12.00$) and on the Mississippi Scale was 67.04 ($SD = 18.05$). The prevalence rate for PTSD in this study group was 9.4%. The criterion for defining a PTSD case was determined in a previous study of Somali peacekeepers; the established cutoff is based on a utility analysis conducted to optimize the specificity and sensitivity of the measures (Litz, Orsillo, et al., 1997).

On average, those participants who reported discussing their experiences in Somalia reported that they disclosed to a total of 8.25 ($SD = 10.58$) persons. The percentage of participants who disclosed to the various categories of confidants were as follows: 69% disclosed to a partner/spouse, 69% disclosed to family, 62% disclosed to friends, 78% disclosed to other military personnel, and 16% disclosed to a professional counselor or

Table 1. Mean Ratings of Peacekeepers on the Reaction to Their Disclosure

	n	Mean (*SD*)[a]
Partner/spouse	294	4.10 (1.28)
Family	295	4.12 (1.24)
Friends	265	3.80 (1.14)
Other military personnel	330	3.95 (1.11)
Professional and/or clergy	69	4.13 (1.34)

[a]The rating scale was based on a 5-point Likert scale, which ranged from 1 (*extremely negative*) to 5 (*extremely positive*).

clergy person. Seventy of the soldiers (16% of the study group) reported that they did not discuss their experiences in Somalia with anyone, 59 of the soldiers (14% of the study group) reported a negative or nonvalidating reaction to their disclosures, and 297 of the soldiers (70% of the study group) reported a validating reaction. The mean ratings and standard deviations for the reported reactions by the various types of confidants to the disclosures appear in Table 1.

Self-Disclosure

The following set of MLRs were conducted to assess whether self-disclosure was related to PTSD symptom severity and whether self-disclosure moderated the effects of exposure to combat and other stressors associated with peacekeeping. The following were the independent variables employed in each of the models (listed in order of entry): (a) covariates: age, years of education, race (dummy coded; 0 = non-Caucasian, 1 = Caucasian), marital status (dummy coded; 0 = not married, 1 = married), and rank (dummy coded; 0 = enlisted, 1 = officer) entered as a block; (b) level of exposure to combat and other stressors associated with peacekeeping (both centered to correct for multicollinearity with the interaction terms); (c) self-disclosure (coded dichotomously); and (d) the product of the level of combat exposure and the self-disclosure variable and the product of the other stressors associated with peacekeeping and the self-disclosure variable. A Bonferoni correction was applied to correct for an increase in the possibility of a Type 1 error given that separate regressions were conducted for each of the five categories of confidants. Thus, the effects were reported only if $p < .01$.

Each of the five overall models predicting PTSD symptom severity from the covariates and self-disclosure was significant: Fs(10, 409) = 5.41–7.53, ps < .001, adjusted R^2s = .10–.14. In these equations, the predictors that accounted for a significant part of the variance were combat exposure (βs = .20–.33, ps < .001) and other stressors associated with peacekeeping (βs = .16–.32, ps < .01). The betas for the disclosure factor were as follows: partner/spouse ($\beta = -.17$, $p < .001$), family members ($\beta = -.19$, $p < .001$), friends ($\beta = -.16$, $p < .001$), and other military personnel ($\beta = -.13$, $p < .01$). Disclosure to professional/clergy was not a significant predictor. The change in R^2 attributable to disclosure to partner/spouse was 3%, to family members was 3%, to friends was 3%, and to other military personnel was 2%. The findings indicate that higher levels of exposure to combat and other stressors associated with peacekeeping were related to greater symptoms of PTSD whereas self-disclosure was associated with lower levels of PTSD symptom severity. None of the interaction terms were significant.

Reaction to Disclosure

The following analyses were conducted to assess whether the different types of confidants' reactions to the disclosures impacted symptom severity and to examine whether the reactions to the disclosure moderated the effects of exposure to combat and other stressors associated with peacekeeping. PTSD symptom severity was regressed on the reaction of each type of confidant (i.e., partner/spouse's reaction, family's reaction, etc.) and on the product of combat exposure and the reaction to disclosure variable and on the product of the other stressors associated with peacekeeping and the reaction to disclosure variable, after controlling for level of exposure to combat and other stressors of peacekeeping and the demographic covariates outlined previously. A Bonferoni correction was applied to correct for an increase in the possibility of a Type 1 error given that separate regressions were conducted for each of the five categories of confidants. Thus, the effects were reported only if $p < .01$. The n in each analysis was determined by the number of participants who disclosed to that type of confidant (see Table 1).

Four of the overall models predicting severity of PTSD symptoms were significant: Fs(8, 251–316) = 3.49–8.97, ps < .001, adjusted R^2s = .07–.18. However, the model predicting symptoms of PTSD symptoms from the reaction to the disclosure by professional/clergy was not significant: $F(8, 59) = 1.34$, *ns*. In these equations, the predictors that accounted for a significant part of the variance were combat exposure (βs = .19–.24, ps < .001) and other stressors of peacekeeping (βs = .15–.18, ps < .01). The following were the betas for the reaction to the disclosure by partner/spouse ($\beta = -.33$, $p < .001$), family members ($\beta = -.19$, $p < .001$), friends ($\beta = -.18$, $p < .01$), and by other military personnel ($\beta =$

$-.14$, $p < .01$). The change in R^2 attributable to the reaction by partner/spouse was 10%, by family members was 4%, by friends was 3%, and by other military personnel was 2%. None of the interaction terms were statistically significant. These findings suggest that positive reactions to self-disclosure generally had an ameliorative effect. Specifically, among those who disclosed, men whose disclosures were met with positive reactions showed fewer symptoms than did men whose disclosures were met with negative reactions.

It was expected that the reaction to the disclosure by those confidants who were closer or more familiar to the veteran would have a larger impact on symptoms of PTSD than by those confidants who would be anticipated to be less familiar to the discloser. An additional MLR was conducted to compare the relative impact of the confidants' reactions to the disclosures across the various categories of confidants. However, few participants disclosed to all five categories of confidants ($n = 48$). As a result, a subsample of participants ($n = 200$) were selected who reported disclosing to each of the four following categories of confidants: partner/spouse, family, friend, and other military personnel. PTSD was then regressed on the reaction of each of the four categories of confidants (entered as a block), after controlling for the covariates, including level of exposure to combat and other stressors of peacekeeping, as outlined previously. The model was statistically significant: $F(11, 188) = 3.75$, $p < .001$; adjusted $R^2 = .13$. In this equation, the predictors that accounted for a significant part of the variance were rank ($\beta = -.23$, $p < .05$), other stressors of peacekeeping ($\beta = .19$, $p < .05$), reaction by partner/spouse ($\beta = -.16$, $p < .05$), and reaction by family ($\beta = -.15$, $p < .05$). A post hoc analysis comparing the regression coefficients for the reaction by partner/spouse and the reaction by family revealed that there was no significant difference, $t < 1$. Thus, supportive reactions by partner/spouse and family were especially associated with a reduction in the report of symptoms.

Next, an analysis was conducted to test whether PTSD symptom severity differed between the following groups of participants: those who did not disclose to anyone, those who reported that their disclosures were met with a generally negative or nonvalidating response, and those who reported that their disclosures were met with a positive response. The determination of the latter two groups was based on mean ratings of reactions to self-disclosure across confidants as outlined in the Method section. A one-way analysis of covariance (ANCOVA) was conducted to compare the mean scores on the PTSD measure, after controlling for the covariates, including level of exposure to combat and other stressors of peacekeeping, across the three groups of peacekeepers: peacekeepers who did not disclose; those who disclosed, but were met with a negative or nonvalidating response; and those who disclosed, and were met with a positive reaction. The analysis revealed a significant effect for the response to the disclosure: $F(2, 410) = 18.05$, $p < .001$. Bonferroni post-hoc comparisons revealed that peacekeepers whose disclosures were met with a positive response reported lower levels of symptom severity on the composite measure ($M = -0.21$, $SD = 0.78$) than did those peacekeepers whose disclosures were met with a negative or nonvalidating response ($M = 0.37$, $SD = 1.12$), $t(354) = 4.86$, $p < .01$, and those peacekeepers who reported that they did not discuss their experiences in Somalia with anyone ($M = 0.32$, $SD = 1.15$), $t(365) = 4.68$, $p < .01$. These effect sizes ($d = 0.61$ and 0.55, respectively) are in the moderate range. However, no significant difference emerged between the latter two groups ($M = 0.37$, $SD = 1.12$ vs. $M = 0.32$, $SD = 1.15$), $t < 1$. The effect size was 0.05.

Discussion

In this study, reports of self-disclosure were negatively associated with PTSD symptom severity. Specifically, self-disclosure to partner/spouse, family, friends, and/or other military personnel was related to lower levels of PTSD symptom severity. However, the effect of self-disclosure on PTSD symptom severity was not moderated by the degree of exposure to combat nor by peacekeeping stressors. These results were consistent with a nonspecific model of self-disclosure rather than a stress-specific, which suggests that the effects of self-disclosure are independent of stress exposure. These findings are also consistent with previously proposed theoretical models (Fontana & Rosenheck, 1994; Joseph et al., 1992).

As expected, the reactions to self-disclosure by partner/spouse, family, friends, and other military personnel were significantly associated with PTSD symptom severity. In each instance, more positive reactions were related to lower levels of PTSD symptom severity. However, the effects of the reactions to self-disclosure on PTSD symptom severity were not moderated by the degree of exposure to combat nor by peacekeeping stressors. This finding is consistent with the research on veterans adaptation to war, which documents that supportive interaction serve to ameliorate the negative effects of combat exposure across different levels of exposure (e.g., Green et al., 1990; Taft, Stern, King, & King, 1999).

Veterans who experienced a positive or validating reaction to their disclosures reported lower levels of symptom severity than did those who reported disclosing to no one or who reported experiencing a negative or

nonvalidating reaction to their disclosures. However, no differences were detected in PTSD symptom severity between veterans whose disclosures were met with an overall negative or nonvalidating response and those who did not disclose at all. This latter finding suggests that negative or nonvalidating responses by others to self-disclosure may negate the potentially beneficial effects of discussing the experience. However, it may also indicate that there are equally negative effects of not disclosing when the alternative is disclosure followed by a negative response.

Furthermore, these results demonstrate that the reactions of some types of confidants were more consistently related to symptoms of PTSD (i.e., partner/spouse, family). Positive support in response to self-disclosure within the peacekeepers' immediate environment may be an important factor to successful adaptation following exposure, which is consistent with previous studies in which interactions with a spouse were demonstrated to have the most pronounced effect on mental health (e.g., Major, Zubek, Cooper, Cozzarelli, & Richards, 1997).

Contrary to our expectations, the reports of the reactions by professional counselor or clergy did not have a significant impact on PTSD symptom severity. This is surprising given the presumed therapeutic, nonjudgmental roles of these professions. However, given that there were relatively few people who reported disclosing to this category of confidant, it is possible that the lack of a significant effect was the consequence of insufficient power. Alternatively, it may be that a selection effect was operating among those who reported disclosing to professional counselor or clergy. For example, these participants might have differed on some unmeasured variable (e.g., history of mental illness, presence or quality of more centric relationships).

There are several methodological limitations to this study. Because of the correlational design and retrospective, self-report method of data collection, it is not possible to draw causal inferences about the relationships between the variables. It is possible that a number of third variables may have contributed to our findings. For example, veterans who were distressed at the time of the interview may have reported disclosing to fewer individuals and experiencing more negative responses to their disclosures as part of a pessimistic or depressive response style. Alternatively, it is plausible that those who report self-disclosing adapt themselves better because of a general propensity to approach and address stressful life experiences. Of course, it is possible that individuals who were most traumatized by their experience avoided disclosing, rather than vice versa. Finally, the generalizibility of these findings is restricted. Although the current findings may be particularly relevant to soldiers in similar circumstances, the degree to which these results are generalizable to female and civilian samples remains unclear. Notwithstanding, many of the results are in accord with prior findings, including studies that have utilized alternate methodological approaches (Litz, Orsillo, et al., 1997; Pennebaker & O'Heeron, 1984). Thus, it appears that self-disclosure is implicated in the adaptation of military personnel to stressful deployments.

Acknowledgments

This research was supported in part by a grant from the Department of Veterans Affairs, Veterans Health Administration, Health Services Research, and Development Service, and in part by the Massachusetts Veterans Epidemiology Research and Information Center. The authors thank the following individuals for their conceptual and editorial assistance: Adam Hafdahl, Anthony Daiuto, Lynda King, Dan King, Don Baucom, Diane Chambless, Abigail Panter, and Peter Bachrach.

References

Blanchard, E. B., Jones-Alexander, J., Buckley, T. C., & Forneris, C. A. (1996). The psychometric properties of the PTSD Checklist (PCL). *Behaviour Research and Therapy, 34,* 669–673.

Fairbank, J. A., Hansen, D. J., & Fitterling, J. M. (1991). Patterns of appraisal and coping across different stressor conditions among former prisoners of war with and without PTSD. *Journal of Consulting and Clinical Psychology, 59,* 274–281.

Foa, E. B., & Kozak, M. J. (1986). Emotional processing of fear: Exposure to corrective information. *Psychological Bulletin, 99,* 20–35.

Fontana, A., & Rosenheck, R. (1994). Posttraumatic stress disorder among Vietnam theater veterans: A causal model of etiology in a community sample. *Journal of Nervous and Mental Disease, 182,* 677–684.

Green, B. L., Grace, M. C., Lindy, J. D., Gleser, G. C., & Leonard, A. (1990). Risk factors for PTSD and other diagnosis in a general sample of Vietnam veterans. *American Journal of Psychiatry, 147,* 729–733.

Johnson, D. R., Lubin, H., Rosenheck, R., Fontana, A., Southwick, S., & Charney, D. (1997). The impact of homecoming reception on the development of posttraumatic stress disorder: The West Haven Homecoming Stress Scale (WHHSS). *Journal of Traumatic Stress, 10,* 259–277.

Joseph, S., Andrews, B., Williams, R., & Yule, W. (1992). Crisis support and psychiatric symptomatology in adult survivors of the Jupiter cruise ship disaster. *British Journal of Clinical Psychology, 31,* 63–73.

Keane, T. M., Caddell, J. M., & Taylor, K. L. (1988). Mississippi scale for combat-related posttraumatic stress disorder: Three studies in reliability and validity. *Journal of Consulting and Clinical Psychology, 56,* 85–90.

Keane, T. M., Fairbank, J. A., Caddell, J. M., Zimering, R. T., Taylor, K. L., & Mora, C. A. (1989). Clinical evaluations of a measure to assess combat exposure. *Psychological Assessment, 1,* 53–55.

Kelly, A. E., Coenen, M. E., & Johnston, B. L. (1995). Confidants' feedback and traumatic life events. *Journal of Traumatic Stress, 8,* 161–169.

King, D. W., King, L. A., Foy, D. W., Keane, T. M., & Fairbank, J. A. (1999). Posttraumatic stress disorder in a national sample of female and male Vietnam veterans: Risk factors, war-zone stressors, and resilience-recovery variables. *Journal of Abnormal Psychology, 108,* 164–170.

Lepore, S. J., Silver, R. C., Wortman, C. B., & Wayment, H. A. (1996). Social constraints, intrusive thoughts, and depressive symptoms among bereaved mothers. *Journal of Personality and Social Psychology, 70,* 271–282.

Litz, B. T., King, L. A., King, D. W., Orsillo, S. M., & Friedman, M. J. (1997). Warriors as peacekeepers: Features of the Somalia experience and PTSD. *Journal of Consulting and Clinical Psychology, 65,* 1001–1010.

Litz, B. T., Orsillo, S., Freidman, M., Ehlich, P., & Batres, A. (1997). Posttraumatic stress disorder associated with peacekeeping duty in Somalia for US military personnel. *American Journal of Psychiatry, 154,* 178–184.

Major, B., Zubek, J., Cooper, M. L., Cozzarelli, C., & Richards, C. (1997). Mixed messages: Implications of social conflict and social support within close relationships for adjustment to a stressful life event. *Journal of Personality and Social Psychology, 72,* 1349–1363.

McFarlane, A. C. (1988). The longitudinal course of posttraumatic morbidity: The range of outcomes and their predictors. *Journal of Nervous and Mental Disease, 176,* 30–39.

Orsillo, S. M., Roemer, L., Litz, B. T., Ehlich, P., & Friedman, M. J. (1998). Psychiatric symptomatology associated with contemporary peacekeeping: An examination of post-mission functioning among peacekeepers in Somalia. *Journal of Traumatic Stress, 11,* 611–625.

Pennebaker, J. W., & Harber, K. D. (1993). A social stage model of collective coping: The Loma Prieta earthquake and the Persian gulf war. *Journal of Social Issues, 49,* 125–145.

Pennebaker, J. W., & O'Heeron, R. C. (1984). Confiding in others and illness rates among spouses of suicide and accidental death victims. *Journal of Abnormal Psychology, 93,* 473–476.

Solkoff, N., Gray, P., & Keill, S. (1986). Which Vietnam veterans develop posttraumatic stress disorders? *Journal of Clinical Psychology, 42,* 687–698.

SPSS, Inc. (1999). *SPSS user's guide, version 9.0.* Chicago: Author.

Taft, C. T., Stern, A. S., King, L. A., & King, D. W. (1999). Modeling physical health and functional health status: The role of combat exposure, posttraumatic stress disorder and personal resource attributes. *Journal of Traumatic Stress, 12,* 3–23.

Ullman, S. E. & Filipas, H. H. (2001). Predictors of PTSD symptom severity and social reactions in sexual assault victims. *Journal of Traumatic Stress, 14,* 369–389.

Weathers, F. W., Litz, B. T., Herman, D. S., Huska, J. A., & Keane, T. M. (1993, November). *The PTSD Checklist (PCL): Reliability, validity, and diagnostic utility.* Paper presented at the annual meeting of the International Society for Traumatic Stress Studies, San Antonio, Texas.